

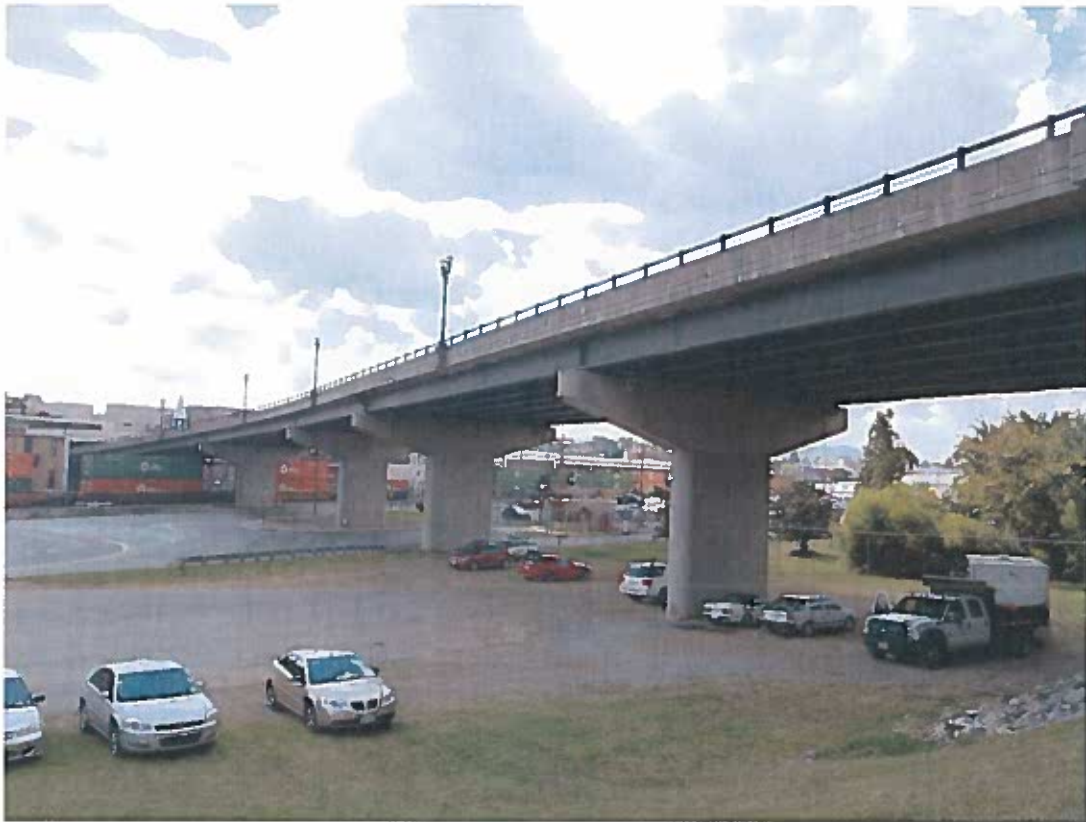
2014 BRIDGE INSPECTION REPORT

FOR

STRUCTURE NO. 8004

GAINSBORO ROAD (2ND STREET)
OVER
NS RAILWAY AND SHENANDOAH AVENUE

30 SEPTEMBER 2014
AND
16 OCTOBER 2014




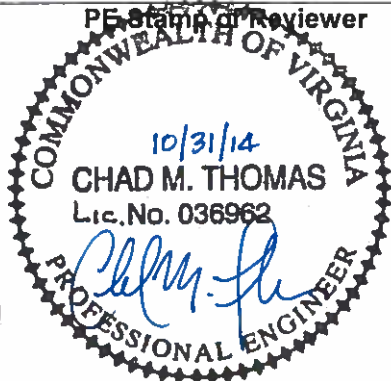

Report By:
Mattern & Craig

 **Mattern & Craig**
ENGINEERS • SURVEYORS

City of Roanoke

STRUCTURE INSPECTION REPORT - SUMMARY

Fed. Str. No.	25739	Date of Inspection:	30 September 2014
State Str. No.	128 8004	Type of Inspection:	Routine
Cnty/City:	City of Roanoke	Feature Intersected:	NS Railway & Shenandoah Avenue
Main Route:	0000 Milept: 0.000	Facility Carried:	Gainsboro Road (2 nd Street)
Lead Inspector:	D.K. Allen		
Additional Inspectors:	M.L. Fizzano, P.F. Cardwell		

Signature of Lead Inspector		PE Stamp of Reviewer 
Signature of Reviewer		

SPECIAL FEATURE INSPECTIONSFracture Critical ☐Fatigue Prone Details ☐Underwater ☐CONDITION RATINGS

*Deck:	7
Superstructure:	7
Substructure:	7
Channel/Slope Prot.:	N
Culvert:	N

FIELD POSTING

R12-1 (Ton):	N
R12-5, Type 3 (Ton):	N
R12-5, Type 3S2 (Ton):	N
Sign Legibility:	N
Sign Visibility:	N

TRAFFIC SAFETY FEATURES

Bridge Railings:	0
Transitions:	0
Approach Guardrail:	1
Approach Guardrail Ends:	1

YEAR PAINTED

1997

ATTACHMENTS:
 Structure Inventory Data Sheet ☒
 Cover Sheet of Rating Calculations ☐

 Sketches ☐
 Underwater Inspection Report ☐

 Channel Profile ☐
 Clearance Sheet ☒

LOCATION	0.02 Miles from Loudon Avenue. 0.03 Miles from Salem Avenue.
ORIENTATION	Abutment A on the south end of the bridge (closest to Salem Avenue). Spans (6) and piers (5) are numbered from Abutment A. Girders (7) are numbered from west to east (facing Abutment B).
MISCELLANEOUS (Items which are structure specific and cannot be included in another section.)	Minimum vertical and horizontal clearances are noted on Sheet CL1. Deficiencies in bold denote changes from previous inspection report.
WORK DONE	None.
STRUCTURAL ANALYSIS	None.

City of Roanoke

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SPECIAL REQUIREMENTS (Special Equipment needed or Special Inspections required such as: Fracture Critical, Underwater, Fatigue Prone, Scour Critical, Moveable Bridge, Segmental Concrete, Pin and Hanger, etc.)	Bridge inspected with the aid of a "snooper" inspection vehicle.
OVERALL CONDITION	This structure is in good condition. There are cracks in the top of the deck, curbs, sidewalks, and parapets. There are cracks, spalls, and delaminations in the substructure. The west side of the tooth expansion joint at Pier 4 is separated from the concrete in Span 3 and has created a large spall in the parapet and deck overhang. There is heavy dirt and debris in the expansion joint at Pier 4. There are loose girder splice bolts and anchor bolt nuts throughout the superstructure. There are splits in the rail posts for both railings. The deck drainage system is not functioning as intended, due to the clogged drain grates and drainage collector boxes, cracks and disconnected fittings, and a missing end plug.
RECOMMENDATIONS	<ol style="list-style-type: none"> 1. Clean out and repair the tooth expansion joint at Pier 4. 2. Clean out the deck drainage system, repair the cracks fittings, and replace the missing end plug in Span 5. 3. Tighten the loose splice bolts and anchor bolt nuts throughout the superstructure. 4. Seal the cracks in the top of the deck, curb, and sidewalks. 5. Repair the spalls/delaminations in the substructure. 6. Repair/replace the split rail posts for the railings.

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DECK

GENERAL CONDITION RATING 7

Top of Deck

Areas of hairline map cracking throughout. Light chipping (up to 1/2" deep) in edge of deck along expansion joint at both abutments. Hairline cracking in all spans as follows (Photo 1):

		Transverse	Longitudinal
Span 1	NB	160 LF	95 LF
	SB	85 LF	70 LF
Span 2	NB	210 LF	100 LF
	SB	90 LF	150 LF
Span 3	NB	310 LF	160 LF
	SB	260 LF	170 LF
Span 4	NB	65 LF	80 LF
	SB	100 LF	85 LF
Span 5	NB	30 LF	170 LF
	SB	25 LF	210 LF
Span 6	NB	150 LF	140 LF
	SB	95 LF	163 LF

Bottom of Deck

Stay-in-place forms. Light areas of rust, moisture seepage, and section loss noted throughout (Photo 2).

Transverse hairline cracking with efflorescence noted in both deck overhangs (Photo 3).

Curbs

Vertical hairline cracking throughout (Photo 4). Light traffic damage noted along curbs.

Sidewalks

Transverse hairline cracks in both sidewalks (Photo 4): 170 in west side and 140 in east side. 280 LF of longitudinal hairline cracks and light map cracking in west sidewalk.

Parapets

Full height vertical hairline cracks with efflorescence on each face of both parapets (Photo 4). Light horizontal hairline cracking at parapet construction joints. 4 SF spall/delamination (up to 3" deep) with exposed reinforcing steel in exterior face of west parapet at Pier 4 (Photo 5). Spall extends into back of sidewalk. 0.5 SF delamination on exterior face of east parapet at light pole between Piers 1 and 2.

Railings

Paint is peeling throughout both railings (Photo 6). Rail posts exhibit splitting (up to 1/4" wide) longitudinal to the post axis (Photo 6): 11 in east railing, 16 in west railing.

Drains

Majority of drain grates are clogged (up to 100%) with dirt and debris (Photo 7). Several hangers for pipes are bent in each span. Active and evidence of past water leakage at Pier 2 (east drain), Pier 4 (west drain) (Photo 8), and Pier 5 (west drain).

Span 1

Disconnected fitting for east drain pipe adjacent to Abutment A (Photo 9).

Span 3

Drainage collector box at Pier 2 is clogged.

Span 4

Elbow for west drain pipe is cracked.

Span 5

Missing plug at end of west drain pipe.

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	<u>Span 6</u>	Lower elbow coupling and cross fitting for west drain pipe at Pier 5 are cracked. Drainage collector box at this location is clogged. Missing nut (under) at top connection on hanger for west drain pipe to first cross brace north of Pier 5. Cracked T-fitting for west drain pipe near midspan. Cracked T-fitting for west drain pipe at Abutment B. The vertical rubber fitting between the west drain pipe and the deck drain is separated at Abutment B (Photo 10).
	<u>Lighting</u>	<u>Top</u> Missing screws in cover plates for lighting utility access boxes embedded in both sidewalks as follows: Span 4, east sidewalk - 11 of 12 are missing. Span 4, west sidewalk - 2 of 12 are missing. Span 5, east sidewalk - 2 of 12 are missing.
		<u>Underside</u> Light rust and corrosion on all lighting conduits (Photo 11). Pier 2 - Cracked lens for east light on Span 3 side (Photo 11). Pier 4 - Cracked lens for west light on Span 4 side.
	<u>Utilities</u>	Two 4" utility conduits between Girders 3 and 4 in Span 2. Several hangers are bent.
<u>Expansion Joints</u>	<u>Preformed Elastomeric Joints</u>	At both abutments. Light dirt and debris in joints at both abutments (Photo 12). One small split (less than 6" long) in joint material near west end of Abutment B.
	<u>Tooth Expansion Joint</u>	At Pier 4. South side of joint has separated (up to 1") from adjacent concrete on west end of structure (Photo 5). Heavy dirt and debris in trough has clogged the collection system at both ends of pier (Photos 8 & 13).

SUPERSTRUCTURE	GENERAL CONDITION RATING	7
<u>Bearing Devices</u>	Light surface rust on most bearing devices, primarily under expansion joints (Photo 14). Anchor bolts do not extend past top of nut at several locations throughout the structure. Anchor bolts for girders in Span 5 at Pier 4 are bent slightly to the north (worst at Girder 4) (Photo 14). Loose anchor bolt nuts noted throughout as follows (Photo 15):	
	<u>Abutment A</u>	<u>Pier 3</u>
	Girder 1 - 1	Girder 4 - 1
	Girder 3 - 2	Girder 5 - 1
	Girder 4 - 1	Girder 6 - 1
	Girder 5 - 2	
	Girder 7 - 1	<u>Pier 4</u>
		Girder 3 - 2 (1 noted during previous inspection)
	<u>Pier 1</u>	Girder 5 - 1
	Girder 2 - 1	Girder 7 - 1
	Girder 3 - 1	
	Girder 4 - 1	<u>Pier 5</u>
	Girder 7 - 1	Girder 4 - 1
	<u>Pier 2</u>	
	Girder 2 - 2	
	Girder 3 - 1	
	Girder 4 - 1	

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GIRDERS	Heavy pigeon droppings noted in Spans 1-3. Light rust on the bottom of flange of Girder 7 in Span 1. Girder 7 is also scratched at this location, probably as a result from impact by an over-height vehicle. Loose bolts in girder splices as follows: Span 3 - 1 at Girder 5 (bottom flange) Span 4 - 1 at Girder 1 (bottom flange) Span 4 - 1 at Girder 6 (bottom flange) Span 6 - 1 at Girder 3 (bottom flange) (Photo 16) Span 6 - 1 at Girder 5 (bottom flange) Span 6 - 1 at Girder 6 (web)
<u>Cross Frames</u>	Underside of 1 st diaphragm from Abutment A, Span 1, is scratched, probably from over-height vehicle. First cross brace south of Pier 2 between all girders has been retrofitted and has a torch cut on the bottom chord at the gusset plate connection. Loose bolts in cross frame connections to girders as follows: Span 2 - 1 at Girder 5, 4 th cross frame north of Pier 1 (bottom plate). Span 5 - 1 at Girder 1, 2 nd cross frame south of Pier 5 (top plate).
PAINT	Year painted – 1997. Peeling on Girder 5 in Span 2, near mid-span (Photo 17). Flaking at Girder 6 bearing, Pier 4, north side.

SUBSTRUCTURE	GENERAL CONDITION RATING 7
ABUTMENTS	
<u>Wingwalls</u>	No deficiencies noted. MSE construction.
<u>Backwalls</u>	<u>Abutment A</u> 24 full width hairline cracks in top of backwall. Light chipping (up to 1/2" deep) in top of backwall. 9 full height vertical hairline cracks in face of backwall (Photo 18). <u>Abutment B</u> 1 SF spall/delamination (up to 2-1/2" deep) in top of backwall in left southbound lane (Photo 12). 19 full width hairline cracks in top of backwall. Light chipping (up to 1/2" deep) in top of backwall. 11 full height vertical hairline cracks in face of backwall.
<u>Bearing Seats</u>	Light dirt and debris on all bearing seats.
<u>Breastwalls</u>	Light dirt and debris on top of both breastwalls. <u>Abutment A</u> 9 full height vertical hairline cracks in MSE wall coping (Photo 18). 3 full width horizontal hairline cracks in east corner coping (post). 1 full width horizontal hairline crack in west corner coping (post). <u>Abutment B</u> 17 full height vertical hairline cracks in MSE wall coping. Two horizontal hairline cracks in east corner coping (post). Two horizontal hairline cracks in west corner coping (post).
<u>Footings</u>	Not visible.
<u>Undermining</u>	No deficiencies noted.
<u>Settlement</u>	No deficiencies noted.

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PIERS	<u>Caps</u>	Light hairline cracks on top of all pier caps. Light vertical hairline cracks in faces of all pier caps. <u>Pier 1</u> 0.5 SF spall (up to 2" deep) in underside of east arm, Span 2 side (Photo 19). <u>Pier 2</u> 0.5 SF spall (up to 2" deep) in east end at top. Exposed reinforcing steel in underside of east arm due to lack of cover. <u>Pier 4</u> Active and evidence of past water leakage from expansion joint trough at both ends of cap (Photo 8). 1 LF vertical hairline crack under west drain pipe. <u>Pier 5</u> 1 LF vertical hairline crack under west drain pipe.
	<u>Bearing Seats</u>	Light dirt and debris on all bearing seats. Light hairline cracks across tops of bearing seats.
	<u>Stems</u>	<u>Pier 1</u> Light vertical hairline cracking and map cracking on both faces. 0.5 SF of spall (up to 1" deep) with exposed reinforcing steel in east radius. <u>Pier 4</u> Light map cracking at both ends.
	<u>Footings</u>	Not visible.
	<u>Undermining</u>	No deficiencies noted.
	<u>Settlement</u>	No deficiencies noted.

CHANNEL AND SLOPE PROTECTION	GENERAL CONDITION RATING N
<u>Vegetation</u>	No deficiencies noted.
<u>Slope Protection</u>	Concrete slope protection at Abutment B only. Horizontal cracks (up to 1/8" wide) in several panels.

FIELD POSTING	
<u>Actual Posting</u>	Not posted.

OTHER	
APPROACH PAVEMENT	Full width transverse crack (up to 1/8" wide) at end of both buried approach slabs.
APPROACH SLABS	Not visible.

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APPROACH CURBS	1 SF delamination in west approach curb at Abutment A. 1 SF spall (up to 1-1/2" deep) in east approach curb at Abutment B.
APPROACH SIDEWALKS	Settlement (up to 1-1/2") in east approach sidewalk at Abutment B.
APPROACH PARAPETS	Vertical hairline cracking, some with efflorescence, throughout.
APPROACH RAILINGS	Missing connection bolt for west approach railing at 2nd rail post from Abutment B (Photo 20).
TRAFFIC SAFETY FEATURES	
<u>Bridge Railings</u>	Inspected feature does not meet current acceptable standards.
<u>Transitions</u>	Inspected feature does not meet current acceptable standards. Present at Abutment B only. 2 missing nuts on guardrail anchorage to Abutment B east approach parapet (Photo 21).
<u>Approach Guardrails</u>	Inspected feature meets current acceptable standards. Present at Abutment B only.
<u>Approach Guardrail Terminals</u>	Inspected feature meets current acceptable standards. Present at Abutment B only.
OBJECT MARKERS	No object markers present.

PHOTO SHEET

BRIDGE: GAINSBORO ROAD (2ND STREET) OVER NS RAILWAY
AND SHENANDOAH AVENUE

STRUCTURE: 8004

CITY/TOWN: CITY OF ROANOKE, VIRGINIA

DATE: 30 SEPTEMBER 2014

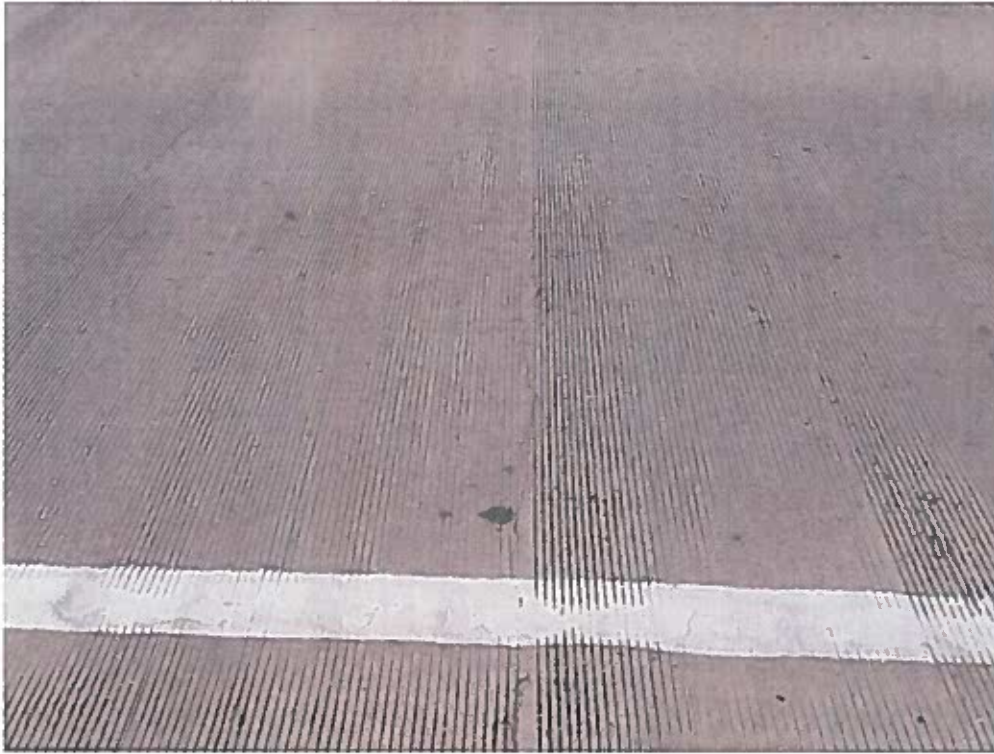


PHOTO 1 - TYPICAL CONDITION OF TOP OF DECK. NOTE CRACKING.



PHOTO 2 - RUST AND SECTION LOSS TO STAY-IN-PLACE FORM.

PHOTO SHEET

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PHOTO 3 - TYPICAL CRACKING WITH EFFLORESCENCE IN DECK OVERHANG.



PHOTO 4 - TYPICAL CRACKING IN CURB, SIDEWALK, AND PARAPET.

PHOTO SHEET

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PHOTO 5 - CONDITION OF PARAPET AND EXPANSION JOINT AT WEST END OF PIER 4.



PHOTO 6 - TYPICAL SPLIT IN RAIL POST.

PHOTO SHEET

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PHOTO 7 - TYPICAL CLOGGED DRAIN GRATE.



PHOTO 8 - CONDITION OF EXPANSION JOINT TROUGH AT WEST END OF PIER 4.

PHOTO SHEET

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STRUCTURE: 8004

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DATE: 30 SEPTEMBER 2014



PHOTO 9 - SEPARATED COUPLING FOR EAST DRAIN PIPE AT ABUTMENT A.



PHOTO 10 - SEPARATED RUBBER COUPLING FOR WEST DRAIN PIPE IN SPAN 6 AT ABUTMENT B.

PHOTO SHEET

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PHOTO 11 - CRACKED LENS FOR LIGHT ATTACHED TO PIER 2. NOTE RUST ON CONDUIT.



PHOTO 12 - SPALL/DELAMINATION IN TOP OF ABUTMENT B BACKWALL.

PHOTO SHEET

BRIDGE: GAINSBORO ROAD (2ND STREET) OVER NS RAILWAY
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PHOTO 13 - DIRT AND DEBRIS IN PIER 4 EXPANSION JOINT TROUGH.

PHOTO SHEET

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PHOTO 14 - TYPICAL RUST ON BEARINGS UNDER EXPANSION JOINT. NOTE BENT ANCHOR BOLT.



PHOTO 15 - TYPICAL LOOSE ANCHOR BOLT NUT.

PHOTO SHEET

BRIDGE: GAINSBORO ROAD (2ND STREET) OVER NS RAILWAY
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PHOTO 16 - LOOSE BOLT IN BOTTOM FLANGE SPLICE FOR GIRDER 3 IN SPAN 6.



PHOTO 17 - PAINT PEELING ON GIRDER 5 IN SPAN 2.

PHOTO SHEET

BRIDGE: GAINSBORO ROAD (2ND STREET) OVER NS RAILWAY
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PHOTO 18 - TYPICAL VERTICAL CRACKS IN ABUTMENT BACKWALL AND COPING.



PHOTO 19 - SPALLS IN PIER 1 CAP AND STEM.

PHOTO SHEET

BRIDGE: GAINSBORO ROAD (2ND STREET) OVER NS RAILWAY
AND SHENANDOAH AVENUE

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PHOTO 20 - MISSING CONNECTION BOLT FOR WEST APPROACH RAILING NEAR ABUTMENT B.



PHOTO 21 - MISSING NUTS FOR GUARDRAIL ANCHORAGE TO EAST APPROACH PARAPET AT ABUTMENT B.

PHOTO SHEET

BRIDGE: GAINSBORO ROAD (2ND STREET) OVER NS RAILWAY
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PHOTO 22 - VIEW OF ROADWAY LOOKING NORTH.



PHOTO 23 - VIEW OF ROADWAY LOOKING SOUTH.

PHOTO SHEET

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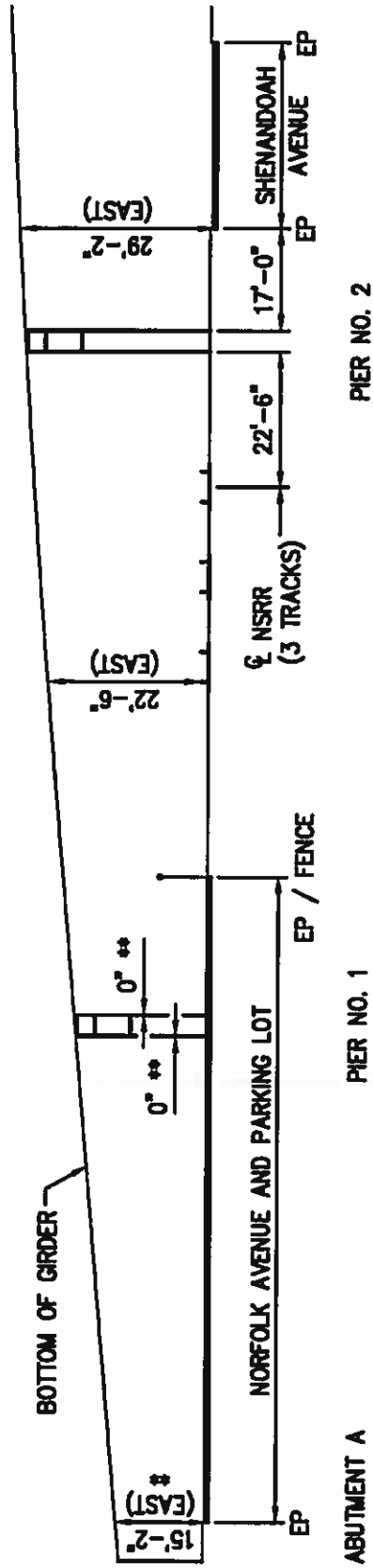
DATE: 30 SEPTEMBER 2014



PHOTO 24 - VIEW OF ROADWAY (UNDER) AND RAILWAY LOOKING EAST.



PHOTO 25 - VIEW OF ROADWAY (UNDER) AND RAILWAY LOOKING WEST.



Measurements taken from bottom of girder to top of pavement and to top of rails

**** denotes minimum vertical and horizontal clearances**



Matter & Craig
CONSULTING ENGINEERS • SURVEYORS

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CLEARANCE PROFILE - GAINSBORO ROAD
O/ NSRR, SHENANDOAH AVE, NORFOLK AVE

BRIDGE NO. 8004
CITY OF ROANOKE, VIRGINIA

Calc'd By:	DKA
Chk'd By:	PFC

Commission No.:
3430

Inspection Date:
30-SEPT-2014

Sheet No.: CL1

ENGINEERS COST ESTIMATE

Structure No. 8004

Gainsboro Road over NS Railway & Shenandoah Avenue

Inspection Date: 30-Sep-14

ITEM	QTY	UNITS	UNIT COST	TOTAL COST
Mobilization @ 10%	1	LS	\$16,900.00	\$16,900.00
Clean out and repair the expansion joint at Pier 4.	1	LS	\$10,000.00	\$10,000.00
Clean out the deck drainage system, repair the cracked couplings, and replace the missing end plug in Span 5.	1	LS	\$25,000.00	\$25,000.00
Tighten the loose girder splice bolts and anchor bolt nuts throughout the superstructure.	1	LS	\$10,000.00	\$10,000.00
Seal the cracks in the top of the deck, curbs, and sidewalks.	5300	LF	\$15.00	\$79,500.00
Repair the spall/delamination in the substructure.	2	SY	\$1,200.00	\$2,400.00
Repair/replace the split rail posts for the railings.	27	EA	\$1,000.00	\$27,000.00
Traffic Control	1	LS	\$15,000.00	\$15,000.00
SUBTOTAL				\$185,800.00
Engineering @ 20%	1	LS	\$37,200.00	\$37,200.00
Contingency @ 25%	1	LS	\$47,000.00	\$47,000.00
TOTAL ESTIMATE				\$270,000.00

'ON' RECORD INVENTORY - Federal Items

Bridge Key: 000000000025739

SDFO : FO

SR : 74.70

Agency ID : 1288004
Maint. Resp. : 128

Identification			
State (1)	51 Virginia	Struc Num (8)	000000000025739
District (2)	Salem	Location (9)	0.03 Miles from Loudoun Avenue 0.03 Miles from ROULET 0.03 Miles from Salem Avenue
Facility Carried (7)	Gainstboro Road	Rte. Signing Prefix (5B)	00000
Feature Intersected (6)	NS Railway, Shenandoah Avenue, Norfolk Avenue	2nd STR OVER NS RWAY	00000
Record Type (5A)	Route On Structure	Place Code (4)	Roanoke
Level of Service (5C)	1 Mainline	County Code (3)	Roanoke (M)
Directional Suffix (5E)	0 N/A (NBI)	Mile Post (11)	0.00
Latitude (16)	37° 19' 20.99"	Border Br. Code (98A)	Not Applicable (P)
Longitude (17)	78° 58' 40.07"	% Responsibility (98B)	-2
		Border Bridge No. (99)	-

Inspection			
FREQ (91)	24	LAST INSP (90)	09/30/2014
RECD (92)	N	LAST INSP (93)	09/11/2014
Fracture Critical	N		
Underwater Insp	N		
Other Special Insp	N		

Classification			
Toll Facility (20)	3 On free road	Fed Maint. Resp. (21)	04 City/Municipal Hwy Agency
Functional Class (26)	14 Urban Other Princ	Owner (22)	04 City/Municipal Hwy Agency
Historical Significance (37)	5 Not eligible for NRHP	Defense Highway (100)	0 Not a STRAHNET hwy
Parallel Structure (101)	No bridge exists	Direction of Traffic (102)	2 2-way traffic
Temporary Structure (103)	Unknown (NBI)	Highway System (104)	1 On the NHS 0 Not on NHS
Nat. Truck Network (110)	0 Not part of natl netw	NBIS Length (112)	Long Enough
National Base Net (12)	1	LRS Inv Rte (13a)	0000000000
		Subst (13)	00

Condition			
Deck (56)	7 Good	Superstructure (59)	7 Good
		Channel/Channel Protection (61)	Not Applicable
		Substructure (60)	7 Good
		Culvert (62)	Not Applicable

Load Rating and Posting			
Design Load (31)	6 HS20+mod	Posting Status (41)	A Open, no restriction
Oper. Rtg. Method (63)	1 LF Load Factor	Oper. Rtg. (64)	47.8
Inv. Rtg. Method (65)	1 LF Load Factor	Inv. Rtg. (66)	27.7
Posting (70)	5 A/Above Legal Loads		

Appraisal			
Bridge Rail (36A)	0 Substandard	Str. Evaluation (67)	8
Transition (36B)	1 Meets Standards	Deck Geometry (68)	2 Irreparable - Replace
Appr. Rail (36C)	1 Meets Standards	Underctr., Vert. and Horiz. (69)	N Not applicable (NBI)
Appr. Rail Ends (36D)	1 Meets Standards	Wideway Adequacy (71)	Not Applicable
Scour Critical (113)	N Not Over Waterway	Approach Alignment (72)	8 Equal Desirable Crt

Proposed Improvements			
Type of Work (75)	38 Other Structural	Improv. Length (76)	638.15
Bridge Cost (84)	\$180,000.00	Year of Estimate (97)	2008
Roadway Cost (95)	\$1,000.00	Total Cost (96)	\$182,000.00
			\$270,000.00

Navigation Data			
Navigation Control 38	NA-no waterway	Horizontal Clearance 40	0.00
Vertical Clearance 39	0.00	Lit. Bridge Vertical Clearance 116	
Pier Protection 111	Unknown (NBI)		

Structure Type and Materials			
No. Spans Main Unit (45)	6	No. Appr. Spans (46)	0
Main Span Material (43A)	4 Steel/Continuous	Appr. Span Material (44A)	0 Other
Main Span Design (43B)	2 Stringer/Girder	Appr. Span Design (44B)	00 Other (NBI)
Deck Type (107)	1 Concrete-Cast-in-Place	Wearing Surface (108A)	0 None
Membrane (108B)	0 None	Deck protection (108C)	1 Epoxy Coated Reinforc

Age and Service			
Year Built (27)	1997	Year Reconstit. (198)	-1
Type of Service On (42A)	5 Highway-pedestrian		
Type of Service Under (42B)	4 Highway-railroad		
Lanes On (28A)	4	Lanes Under (28B)	2
Delour Length (19)	0.00 1.10		
ADT (29)	9,400 8,300	Year of ADT (30)	2010 2012
% Truck ADT (109)	2 3		

Geometric Data			
Length Max Span (48)	116-14 116.00	Structure Length (49)	638-15 636.00
Curb/Sidewalk Width Left (50A)	5.58 5.50	Curb/Sidewalk Width Right (50B)	5.58 5.50
Width Curb to Curb (51)	47.00 48.00	Width Out to Out (52)	59.06 60.67
Appr. Roadway Width (32)	47-00 48.00	Median (33)	0 No median
Skew (34)	12.00°	Structure Flared (35)	0 No flare
Horizontal Clearance (47)	47.00 59.00	Deck Area	37,568.20
Vertical Clearance (10)	99.99		
Minimum Vertical Clearance Over Bridge (53)	99.99	H Hwy beneath struct	22-00 15.17
Minimum Vertical Underclearance Reference (54A)		N Footwtr not hwy or RR	H Hwy beneath struct
Minimum Lateral Underclearance Reference Right (55A)			
Minimum Lateral Underclearance Right (55B)	0.00		
Minimum Lateral Underclearance Left (56)	0.00		

Federal 'On' Record Inventory Report

Mon 12/09/2013 15:22:21

Agency ID : 1288004
Meint. Resp. : 128

'ON' RECORD INVENTORY - State Items

Bridge Key: 000000000025739

Bridge Inventory

VA Str Number (S4) : 8004
Special Codes (S12) :
Special Structure Code(S173) : 08 Curved Girder
Jurisdiction Code (S1) : Salem - 14
Sketch Page Number (S172) :
Adj. Juns Code(S10) : Roanoke (M) - 128
Original Plan Number (S13a) :
Map Location (S195) :
Original Sid Plan Number (S13b) :
All Location (S193) :
Recon. Plan Number (S14a) :
Parallel Structure (S192) :
Repl. Structure(S38) : N Does not Replace
Railroad Mile Post (S191) :

Hydraulics

Scour Critical Ind (S30) : N No Study Required
Scour Critical Remark (S31) :
Height of Opening (S24) : 0
Drain Barrel Length (S25) : 0
Drain Depth of Fill (S28) : 0
Tidal Indicator (S42) : N Not Tidal Water
Number Drain Openings (S22) : 0
Drainage Area (S194) :
Drain Width (S23) : 0

Appurtenances (S198)

Sign : N Sound Wall : N Ped Fence : N

Ratings

Design Load High (S44) : 6 HS 20+med
Stress Level (S47) : M Mid-Range
Stress Analysis Meth (S48) : L Fed-LF State-LF
Computer File Name (S49a) : X1288004
Last Run Date (S49b) : 01/01/1901
Posted Date (S51) : 01/01/1901
Foot Bridge Posting (S169) :

Construction and Maintenance

Year Reconstructed (S27) : 0
Type Construction (S39) : N - Bridge
Type Reconstruction (S40) :
Year Last Painted (S64) : 1997
Paint System (S188) :
Project Status Code (S189) :
Project UPC Code (S58) : 0
HBRRP Indicator (S41) : N Not Applicable
Maint. Resp - State (S15) : Roanoke (M) - 128

Special Equipment (S64)

Ladder : N
Schooper : N
Boat : N
MarLift : N
Bucket Truck : N
Pontoon : N
Scalld : N
Rigging : N
Platform Truck : N

Utilities (S199)

Water : N
Gas : N
Electric : N
Sewer : N
Cable : N
Phone : N
Lighting : N
Fiber Optic : N
Other : N

Substructure Layout (S19, S20, S21)

Abutment A	Material	Design Type	Abutment B	Material	Design Type
Material and Type	1 Concrete	05 Cantilever	Material and Type	1 Concrete	05 Cantilever
FndPiles Mat/Type	3 Firm Material	01 Spread Footing	FndPiles Mat/Type	3 Firm Material	01 Spread Footing
Main Pier - Group 1: Count	0 5		Appt Pier - Group 1: Count	0	
Material and Type	1 Concrete	07 Single Stem - hammerhead	Material and Type		
FndPiles Mat/Type	3 Firm Material	01 Spread Footing	FndPiles Mat/Type		
Main Pier - Group 2: Count	0		Appt Pier - Group 2: Count	0	
Material and Type			Material and Type		
FndPiles Mat/Type			FndPiles Mat/Type		
Main Pier - Group 3: Count	0		Appt Pier - Group 3: Count	0	
Material and Type			Material and Type		
FndPiles Mat/Type			FndPiles Mat/Type		
Main Pier - Group 4: Count	0		Appt Pier - Group 4: Count	0	
Material and Type			Material and Type		
FndPiles Mat/Type			FndPiles Mat/Type		
Main Pier - Group 5: Count	0		Appt Pier - Group 5: Count		
Material and Type			Material and Type		
FndPiles Mat/Type			FndPiles Mat/Type		

Roadway

VA Highway System Code (S185) : Urban
On_Under Code (FSA) : 1
Lane of Road (S5) :
HTRIS Route Number (S8) :
HTRIS Node Number (S7) : 0
HTRIS Node Offset (S9) : 0 00
RNS Location
Latitude : 37.2724972222
Longitude : -79.9444636869

Inspection

Inspection Key : ERKZ
Posted Capacity Std (S52) : 0
Posted Capacity Single (S53) : 0
Posted Capacity Semi (S54) : 0
Posting Sign Leg (S170) :
Posting Sign Vis. (S171) :
Critical Features Class (S62) :
Maint. Repair Cost (\$1000) (S56) : \$ 0
Maintenance Fund Code (S57) : U Urban

Critical Recommendations

Outstanding Critical Recommendation (S176) :
Prev Comp Critical Recommendation (S179) :

Clearance On Structure

Roadway Width - Single/Lett (S33) : 0 00
Roadway Width - Right (S34) : 0 00
Median Width (S35) : 0 00

Agency ID : 1284822-0000000000024732
Maint. Resp. : 128

'UNDER' RECORD INVENTORY

Bridge Key: 0000000000024732

One Route Under		Roadway Identification		Shenandoah Avenue WINCHESTER AVE-		FEDERAL ITEMS		Traffic and Accidents		Clearances			
Distric (2)	Salem	Road/Route Name	Federal Struc ID (8)	0000000000024732	25739	Lanes (28)	4	2	Year of ADT (30)	2014	Vertical (10)	0.00	15.17
County Code (3)	Roanoke (M)	Level of Service (SC)	1	Mainline		ADT (29)	5,000	5,100	Future ADT Year (115)	0	Horizontal (47)	40.67	0.00
Record Type (5A)	One Route Under	Route Number (5D)	00221	000000		% Truck ADT (108)	0	2	Delour Length (m) (119)	0.00	Approach Road (32)	0.00	31.00
Req. Signing Prefix (5B)	2 U & Numbered Hwy					Future ADT (114)	0				Roadway (51)	0.00	31.00
Directional Suffix (5E)	0 H/A (NBI)												
Highway Networks & Service Classifications													
Mile Post (11)	17.60	0.00	Toll Facility (20)	3	On free road	Defense Highway (100)	0	Not a STRAHNET Hwy	Fed Lands Hwy (105)	0			
Nat. Base Net (12)	0		Functional Class (26)	19	Urban Local	Highway System (104)	0	Not on NHS	Nat. Truck Network (110)	0	Not part of natl netw		
LRS Inv Rte (13a)	0000000000	Subroute No (13b)	00	Traffic Direction (102)	2	2-way traffic							
STATE ITEMS													
Roadway													
Jurisdiction Code (S2)	Roanoke (M) - 128	VA Sp. Number (S4)	1822	8004	Median Width (ft) (S35)								
Record Type / On Under (5A)	2	One Route Under			Total Horizontal - Left (ft) (S28)	13.50	0.00	Total Horizontal - Single Right (ft) (S29)	13.00	22.50			
HTRIS Route Number (S7)					Minimum Vertical - Right Code (S36a)	M		Minimum Vertical - Left Code (S37a)	R				
HTRIS Node Number (S8)	0	16' 20.99"	HTRIS Node Offset (S9)	0.00	Minimum Vertical - Right (ft) (S36b)	14.00	15.17	Minimum Vertical - Left (ft) (S37b)	24.00	22.50			
RMS Location -	Latitude	37° 16' 59.73"	Longitude	79° 57' 25.62"	56° 40' 07"								